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GRIMM'S LAW

Grimm's Law: a Study. By T. Le M. Douse. (Trübner and Co., 1876.)

THIS is a very able and closely-reasoned book. Its object is to explain the cause and origin of that curious shifting of sounds known as Grimm's Law, in virtue of which a particular sound in one member of the Indo-European group of languages must answer to another particular sound in another member. The discovery of the law laid the foundation of comparative philology, and raised etymology from mere haphazard guesswork to the rank of a science, but the primary cause and reason of the law itself are still under discussion. We have still to learn why a classical aspirate must answer to a Low German media and a High German tenuis, or a classical tenuis to a Low German aspirate and a High German media.

Mr. Douse's book is intended to be an answer to this question. After criticising and rejecting the various attempts that have been made to solve the problem, he essays a fresh solution of his own. He begins by assuming that the cause of the law must be ultimately found in the principle of least effort, and therefore that no explanation of it can be considered satisfactory which does not derive the weaker sounds from the stronger ones. He then appeals to the curious fact of which the Cockney interchange of *w* and *v* is an example, and from which we learn that where one dialect is in presence of another it compensates for its mispronunciation of a sound in the latter by inverting the places of the two sounds. The same person who leaves out the aspirate where it ought to be sounded will insert it where it has no reason to exist. This is a simple case of "Cross Compensation." Grimm's Law, which involves the interchange of three sounds instead of two, is a more complicated and somewhat varying instance of the same phenomenon, and is referred by Mr. Douse to what he terms "Reflex Dissimilation." He believes, therefore, that the phonetic characteristics of the different branches of the Indo-European family were developed while they were still dialects of one and the same language, and that the characteristics once acquired were only preserved, and perhaps intensified, after the breaking up and separation of the parent tongue. The aspirates originated in the dialect which afterwards became the Low German branch, while the dialect which became the High German branch favoured the soft consonants or mediae. Mr. Douse further holds that the parent language possessed at the outset only tenues or hard consonants. The phonology of the Lithuanian-Slavic branch, which agrees partly with that of the Indian section, partly with that of the Teutonic section, is explained by supposing that the dialect from which it has descended was originally in contact with the dialects of the High Germans and Indo-Greeks, and not with that of the Low Germans, and that its tenues were changed into mediae through the influence of the High German dialect before the latter had become affected by Low German aspiration.

This is a bare outline of Mr. Douse's theory, in connection with which he has introduced a large number of

subsidiary remarks and suggestions of great value and interest. It will be seen that the theory agrees better with the view of J. Schmidt, who maintains that the several members of the Aryan family of speech were originally dialects at a greater or less distance from a single centre, than with that of Fick, who would draw a sharp distinction between the East Aryan and the West or European Aryan groups. Indeed, in so far as Fick's hypothesis implies the chronological descent of one Aryan dialect from another, Mr. Douse's system is absolutely incompatible with it. Mr. Douse, however, seems to me to have fully shown the untenability of the chronological hypothesis under any form, and to have proved once for all that any satisfactory explanation of the phenomena of Grimm's Law must rest upon the belief that the phonetic systems of the various members of the Aryan group go back to a time when they were still co-existing dialects of one primitive tongue. Here as elsewhere language begins with dialectical variety, at least so far as comparative philology has any cognisance of it.

I cannot accept Mr. Douse's postulate, however, that all phonetic problems are to be tested by the principle of laziness or least effort, and that the mere fact that a hypothesis demands the change of a weaker into a stronger sound is a condemnation of it. The principle of laziness in philology can hardly be compared with the law of gravitation in physics, and allowance should be made for the contrary principle of emphasis. The healthy desire to exert oneself is nearly as strong an element in human action as the desire to escape trouble. No doubt the principle of laziness has been a most powerful agent of change in language, but it has not been the sole agent of change. The problems of speech unfortunately do not admit of so simple a solution.

This postulate leads Mr. Douse to another view, which seems to me equally unfounded. Because we can reduce by phonetic analysis the various consonants and vowels of uttered speech to a few tenues and the single vowel *a*, he concludes that the parent Aryan once contained no other sounds than these, and that there was a period when the alphabet consisted of little more than the letters *k*, *p*, *t*, and *a*. This theory of course goes along with the belief that the roots of our Aryan languages can be cut down to a combination of the vowel with a single consonant, a belief which appears to me the *ne plus ultra* of the improbabilities resulting from the prevalent doctrine of roots. There is a good deal to be said for the opinion according to which the European *a*, *e*, and *o* are not differentiated from a primitive *a*, but on the contrary the Indian *a* is the single sound into which the three vowels have coalesced.

I am compelled to part company again with Mr. Douse on the question of the two classes of gutturals which the parent Aryan is believed to have possessed. His theory is that the single tenuis *k* split up into the two varieties of pronunciation, *kw* (*qu*) in the western dialects and *ky* ('s) in the eastern (and Lithuanian-Slavic) dialects, and that originally, therefore, there was only one guttural, or class of gutturals (*k*, *g*, *kh*). M. Havet here seems to me to be more in the right in holding that the parent speech had from the beginning two classes of gutturals, one the pure *k* (*g*, *kh*) and the other a labialised *kw* (*gw*, *khw*). The pure *k* became 's in the Indian (and Lithuanian-Slavic

languages, very probably, as Mr. Douse suggests, through the medium of *ky*. But in spite of his arguments to the contrary, *kw* still seems to me a harder sound than simple *k*, so that even if we accept his own test of the principle of least effort, the latter sound should be derived from the former, and not the converse.¹ He confesses himself, moreover, that his theory fails to explain the equivalence of the Sanskrit *jīv* and the European reduplicated root *gwi-gwi* "to live" (as in the Latin *vivere* and our *quick*), an equivalence which can only be accounted for by supposing that in this particular instance the Indian dialect has preserved the labial semi-vowel of the original root. Equally instructive is the equivalence of the Greek *γαστήρ*, and the Latin *venter* (for *gwenter*), which Mr. Douse does not notice, as it shows that Greek could sporadically deal with the guttural in the same way that Indian and Lithuanian-Slavic habitually did. I can see no reason why these dialects should not have sibilated *k* pure, very possibly through an intermediate *ky*, at the same time that *kw* was being reduced to simple *k*. I have heard *kyind* and *conker* from the same lips. To the instance of words with primitive *ghw* given by Mr. Douse, may be added *ἀλαχός*, Lat. *levis* (for *legvis*), and *βραχύς*, Lat. *brevis* (for *bregvis*).

The excellence of Mr. Douse's book has led me to dwell upon the points which seem to me open to objection, and I have left myself no space to draw attention to the many striking suggestions and new points of view scattered through the volume. I cannot, however, quite pass over the note in which he maintains the existence of bivocalised roots (*aka*, *ata*, &c.), and acutely suggests that the Greek *ἐπέ* and *ἐκεῖνος* imply dissyllabic roots as much as the archaic Latin *enos* or the Sanskrit *ana*, Lat. *olle* (for *onulus*). Mr. Douse has materially helped forward the solution of the problem of Grimm's Law, and if his theory is not secure from attack in every particular, in its main outlines it will doubtless prove correct. At all events the chronological hypothesis which derives the phonetic systems of the Indo-European languages from one another can never again be upheld.

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STEELE'S "EQUINE ANATOMY"

Outlines of Equine Anatomy. By J. H. Steele, M.R.C.V.S. (London : Longmans and Co., 1876.)

ALTHOUGH this manual is intended, as we are informed on the title-page, for the use of veterinary students in the dissecting-room, we think it quite possible that it may have a larger sphere of usefulness.

As long as the study of zoology and comparative anatomy was confined to those who had entered on the medical profession, the human frame formed an excellent standard with which every mammalian animal might be compared in all its parts. Of late, however, since biology has been introduced into general education, those who have taken to it in earnest have not been long in finding that without a pretty thorough knowledge of the details of what may be termed the typical vertebrate structure they are on all sides beset with difficulties ; they make errors in nomenclature, they cannot appreciate the significance of bony processes, and are unable to generalise with safety.

¹ Mr. Rhys reminds me that in the Keltic languages at any rate *kw* (*gu*) is proved to have passed into simple *k* (*c*).

Whether it is possible that the requisite amount of detail will be mastered by those who are not stimulated by the severity of rigid examinations on the way to a professional career is a question which we will not discuss upon the present occasion ; nevertheless, those teachers who are anxious that their pupils should have a reliable work on the anatomy of some one of the lower animals cannot do better than recommend the one at present under notice. The ass is an animal the expense of whose carcase is not excessive. Its size is sufficient for the easy investigation of all its important parts, and its structure is normal enough to form the basis for a competent knowledge of all the essential parts of the mammalian organisation. It is superior to the dog or the cat, because both are as a rule too small for the satisfactory demonstration of many of the more delicate systems, such as the vascular and nervous, except by those who have already had considerable experience in dissecting. Another advantage is that the requirements of the veterinary colleges have led to the production of such works, and there are more elaborate ones, such as that of Chauveau, the translation of which by Mr. George Fleming we reviewed some time ago (NATURE, vol. viii, p. 158), to fall back upon where greater detail is called for. On the other hand, a treatise on the anatomy of the dog would with great difficulty repay any author for the time and labour required in its production.

Mr. Steele's work commences with a chapter on the methods and terms employed. The osteology of the horse is then considered in detail, each bone being fully described. This is followed by a section on arthrology, in which the nature and action of each joint is explained. The fourth part of the volume is devoted to special anatomy, which is treated in the same way as is human anatomy in dissecting manuals generally. Appended are tables of nerves and vessels. The style in which the whole subject is treated is not inferior to that adopted in the best works on anthropotomy, at the same time that the language is clear and concise. We do not quite know why *fascia* should be spelt "faschia" throughout.

In his account of the liver, Mr. Steele reproduces an error found in most works on the subject. This we cannot correct better than by quoting the accurate description given by Prof. Flower in his Hunterian Lectures before the College of Surgeons in 1872.¹ There we learn that "The liver is tolerably symmetrical in its general arrangement, being divided nearly equally into segments by a well-marked umbilical fissure. Each segment is again divided by lateral fissures, which do not extend quite to the posterior border of the organ. Of the central lobes thus cut off, the right is rather [decidedly] the larger, and has two fissures in its free border dividing it into lobules. . . . The two lateral lobes are subtriangular in form. The spigelian is represented by a flat surface between the portal fissure and the posterior [the vertebral] border, not distinctly marked off from the left lateral by a fissure of the ductus venosus, as this vessel is buried deep in the hepatic substance ; but the caudate is distinct and tongue-shaped, its free apex reaching nearly to the border of the right lateral lobe. In most works on the anatomy of the horse (as those of Gurlt and Leisering) [to which

¹ Medical Times and Gazette, August 31, 1872, p. 219.